

**Notice of Allowability**

Application No.

09/865,368

Examiner

Ting Zhou

Applicant(s)

HAND ET AL.

Art Unit

2173

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 22 February 2006.
2. ☒ The allowed claim(s) is/are 1, 3-5, 7-11, 13-21, 23-24, 26-28, 30-34, 36-44 and 46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

### **DETAILED ACTION**

1. The Request for Continued Examination (RCE) filed on 22 February 2006 under 37 CFR 1.53(d) based on parent Application No. 09/865,368 is acceptable and a RCE has been established. An action on the RCE follows.

2. The amendments filed on 30 January 2006, submitted with the filing of the RCE have been received and entered. Claims 1, 3-5, 7-11, 13-21, 23-24, 26-28, 30-34, 36-44 and 46 as amended are pending in the application.

### **EXAMINER'S AMENDMENT**

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Richard A. Hinson (Reg. No. 47,652) on 9 May 2006.

4. The application has been amended as follows:

5. Claim 5 is amended to read:

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Claim 5. The method according to claim 1, wherein said step of determining said value further comprises automatically updating said graphical display representations of said selected ones of said entities in said graphical user interface.

6. Claim 10 is amended to read:

Claim 10. A method for visualizing metrics for at least one component in a heterogeneous content delivery network (CDN), the method comprising:

- defining metrics characterizing the performance of components in the CDN;

- computing values for said defined metrics;

- defining a maximum value and a minimum value for each of said defined metrics;

- quantizing discrete levels between said defined maximum value and said defined minimum value;

- assigning a unique indicator to each said quantized discrete level;

- providing a graphical display of said unique indicators associated with said computed values within a graphical user interface of a machine remotely located from the component, said graphical display displaying user selected ones of said defined metrics, said graphical display changing in response to changes in said computed values and changes occurring in said components;

- displaying in a node map section of said graphical display a plurality of icons in conjunction with said unique indicators, each icon corresponding to a component with the CDN and indicating a physical type of the corresponding component and further displaying links

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connecting at least one said icons to at least one other of said icons, each link illustrating a relative communication relationship between linked network components;

simultaneously displaying in a distinct node detail section information pertaining to each of the selected metrics;

simultaneously displaying in a distinct map view section a list of user-selectable metrics for allowing a user to select metrics for display in said node map section; and

simultaneously displaying in a distinct reset section a selectable list of all metrics and components within the CDN, selection of at least one entry of the selectable list providing a reset function to allow a user to perform at least one of initializing and setting a default value for at least one of said defined metrics.

7. Claim 15 is amended to read:

Claim 15. The method according to claim 10, further comprising updating said graphical display dynamically based upon subsequent value determinations.

8. Claim 19 is amended to read:

Claim 19. A method for monitoring a component in a content delivery network (CDN), comprising:

selecting based upon user input at least one monitored metric corresponding to a component in the CDN;

determining a value for said selected metric;

assigning a discrete quantized level to said determined value based on a predefined maximum and a predefined minimum value for said selected metric;

computing a display indicator based on said assigned quantized level;

providing said display indicator on a graphical display of a machine remotely located from the component, said display indicator providing a visual representation of said monitored metric for the component in the network;

displaying in a distinct node map section of said graphical display an icon in conjunction with said display indicator, said icon corresponding to said component and indicating a physical type of said component;

simultaneously displaying in a distinct node detail section information pertaining to said component;

simultaneously displaying in a distinct map view section a list of user-selectable metrics for allowing a user to select metrics for display in said node map section; and

simultaneously displaying in a distinct reset section a selectable list providing a reset function to allow a user to perform at least one of initializing and setting a default value for said at least one monitored metric.

9. Claim 23 is amended to read:

Claim 23. A system for monitoring components in a content delivery network (CDN), comprising:

plurality of software agents for retrieving values for metrics from the components within a heterogeneous CDN;

a processor remotely located from said software agents for determining a user configurable graphical representation for each of said retrieved values, wherein different graphical representations are determined for different quantized ranges of said retrieved values; and

a graphical user interface of a machine remotely located from at least one of the components for presenting said determined graphical representation, said graphical user interface having a user selectable list of said metrics, said graphical user interface changing to reflect changes to said selections, wherein said graphical user interface includes four distinct sections configured, respectively, as a node map section, a node detail section, a map view section, and a reset section;

said node map section for displaying a plurality of icons in conjunction with unique indicators, each icon corresponding to a component with the CDN and indicating a physical type of the corresponding component, and further displaying links connecting at least one said icons to at least one other of said icons, each link illustrating a relative communication relationship between linked network components;

said node detail section for simultaneously displaying information pertaining to each of the selected metrics;

said distinct map view section for simultaneously displaying a list of user-selectable metrics for allowing a user to select metrics for display in said node map section; and

said distinct reset section for simultaneously displaying a selectable list of all metrics and components within the CDN, selection of at least one entry of the selectable list providing a reset

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function to allow a user to perform at least one of initializing and setting a default value for at least one of said defined metrics.

10. Claim 28 is amended to read:

Claim 28. The machine readable storage according to claim 24, wherein said step of determining said value further comprises automatically updating said graphical display representations of said selected ones of said entities in said graphical user interface.

11. Claim 33 is amended to read:

Claim 33. A machine readable storage having stored thereon, a computer program having a plurality of code sections for monitoring a component in a content delivery network (CDN), said code sections executable by a machine for causing the machine to perform the steps of:

defining metrics characterizing the performance of components in the CDN;

computing values for said defined metrics;

defining a maximum value and a minimum value for each of said defined metrics;

quantizing discrete levels between said defined maximum value and said defined minimum value;

assigning a unique indicator to each said quantized discrete level;

providing a graphical display of said unique indicators associated with said computed value within a graphical user interface of a machine remotely located from the component, said graphical display displaying user selected ones of said defined metrics, said graphical display

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changing in response to changes in said computed values and changes occurring in said components;

displaying in a distinct node map section of said graphical display a plurality of icons in conjunction with said unique indicators, each icon corresponding to a component with the CDN and indicating a physical type of the corresponding component, and further displaying links connecting at least one of said icons to at least one other of said icons, each link illustrating a relative communication relationship between linked network components;

simultaneously displaying a distinct node detail section information pertaining to each of the selected metrics;

simultaneously displaying in a distinct map view section a list of user-selectable metrics for allowing a user to select metrics for display in said node map section; and

simultaneously displaying in a distinct reset section a selectable list of all metrics and components within the CDN, selection of at least one entry of the selectable list providing a reset function to allow a user to perform at least one of initializing and setting a default value for at least one of said defined metrics.

12. Claim 38 is amended to read:

Claim 38. The machine readable storage according to claim 33, further comprising updating said graphical display dynamically based upon subsequent value determinations.

13. Claim 42 is amended to read:



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Claim 42. A machine readable storage having stored thereon, a computer program having a plurality of code sections for monitoring a component in a content delivery network (CDN), said code sections executable by a machine for causing the machine to perform the steps of:

- selecting based upon user input at least one monitored metric corresponding to a component in the CDN;

- determining a value for said selected metric;

- assigning a discrete quantized level to said determined value based on a predefined maximum and predefined minimum value for said selected metric;

- computing a display indicator based on said assigned quantized level;

- providing said display indicator on a graphical display of a machine remotely located from the component, said display indicator providing a visual representation of said monitored metric for the component in the network;

- displaying in a distinct node map section of said graphical display an icon in conjunction with said display indicator, said icon corresponding to said component and indicating a physical type of said component;

- simultaneously displaying in a distinct node detail section information pertaining to said component;

- simultaneously displaying in a distinct map view section a list of user-selectable metrics for allowing a user to select metrics for display in said node map section; and

- simultaneously displaying in a distinct reset section a selectable list providing a reset function to allow a user to perform at least one of initializing and setting a default value for said at least one monitored metrics.

***Allowable Subject Matter***

14. Claims 1, 3-5, 7-11, 13-21, 23-24, 26-28, 30-34, 36-44 and 46 are allowed.

15. The following is an examiner's statement of reasons for allowance: The present invention teaches a method for monitoring and visualizing a plurality of metrics in a dynamic data space by defining metrics that each correspond to one or more entities, each entity corresponding to a network component, in the dynamic data space. Each of the independent claims identifies the distinct feature of simultaneously displaying four distinct sections configured, respectively, as a node map section, a node detail section, a map view section, and a reset section; displaying in a node map section of said graphical display a plurality of icons in conjunction with said unique indicators, each icon corresponding to a component with the CDN and indicating a physical type of the corresponding component and further displaying links connecting at least one said icons to at least one other of said icons, each link illustrating a relative communication relationship between linked network components; displaying in a distinct node detail section information pertaining to each of the selected metrics; displaying in a distinct map view section a list of user-selectable metrics for allowing a user to select metrics for display in said node map section; and displaying in a distinct reset section a selectable list of all metrics and components within the CDN, selection of at least one entry of the selectable list providing a reset function to allow a user to perform at least one of initializing and setting a default value for at least one of said defined metrics. The closest prior art, Dev et al. U.S. Patent 5,261,044 (hereinafter "Dev"), Petty et al. U.S. Patent 6,546,263 (hereinafter "Petty") and Chari et al. U.S. Patent 6,046,742 (hereinafter "Chari"), teach defining metrics characterizing the performance of components in

the CDN; computing values for said defined metrics; defining a maximum value and a minimum value for each of said defined metrics; quantizing discrete levels between said defined maximum value and said defined minimum value; assigning a unique indicator to each said quantized discrete level; and providing a graphical display of said unique indicators associated with said computed values within a graphical user interface of a machine remotely located from the component, said graphical display displaying user selected ones of said defined metrics, said graphical display changing in response to changes in said computed values and changes occurring in said components. In the case of the Dev reference, Dev teaches defining metrics, each of the defined metrics corresponding to at least one entity in the dynamic data space, wherein each entity is a network component and characterizing the performance of the component in a content delivery network; quantizing discrete levels for each of the metrics; assigning a unique indicator to each of the quantized discrete levels; determining a value for each of the defined metrics and responsively determining the unique indicator corresponding to the value; receiving a user selection of particular ones of the entities via a graphical user interface; and providing graphical display representations of the unique indicators associated with the selected entities within a graphical user interface of a machine remotely located from the at least one entity, the graphical interface changing to reflect changes to the selections. In the case of the Petty reference, Petty teaches defining a maximum and minimum value for each of the metrics. In the case of the Chari reference, Chari teaches the management and display of information regarding components in a computer network, i.e. displaying within one section of the graphical user interface, the graphical display representations in a manner as to illustrate relative communication relationships between the network components being monitored and

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simultaneously displaying within another section of the graphical user interface the determined values of the defined metrics associated with the selected entities. However, the prior art fails to teach the simultaneous display of four distinct sections that include: 1) a node map section which displays a plurality of icons in conjunction with the unique indicators, each icon corresponding to a network component and indicating a physical type of the corresponding network component, and further displaying links connecting at least one of the icons to at least one other of the icons; each link illustrating a relative communication relationship between linked network components 2) a node detail section displaying information pertaining to each of the selected entities; 3) a map view section displaying a list of user-selectable metrics for allowing a user to select metrics for display in the node map section; and 4) a reset section displaying a selectable list of all entities and network components, selection of at least one entry of the selectable list providing a reset function to allow a user to perform at least one of initializing and setting a default value for at least one of the defined metrics. Therefore, the prior art fails to anticipate or render the above limitations obvious.

16. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

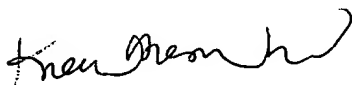
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ting Zhou whose telephone number is (571) 272-4058. The examiner can normally be reached on Monday - Friday 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached at (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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KIEU D. VU  
PRIMARY EXAMINER